



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,335	08/15/2003	Tung-Cheng Kuo	JCLA7850-D	3975

7590

03/26/2004

J.C Patents  
Suite 250  
4 Venture  
Irvine, CA 92618

EXAMINER
----------

NGUYEN, DAO H

ART UNIT	PAPER NUMBER
----------	--------------

2818

DATE MAILED: 03/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/643,335

Applicant(s)

KUO ET AL.

Examiner

Dao H Nguyen

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 10/134,223.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. In response to the communications dated 08/15/2003, claims 1-8 are active in this application as a result of the cancellation of claims 9-19 in the Preliminary Amendment filed 08/15/2003.

### **Acknowledges**

2. Receipt is acknowledged of the following items from the Applicant.

This application is a Divisional of the U.S. Application No. 10/134,223, filed 04/25/2002, now U.S. Patent No. 6,680,227.

### **Foreign Priority**

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in parent Application 10/134,223.

### **Specification**

4. The specification is objected for the following reason: In the Abstract, line 2, in the phrase "the word line includes a metal layer a polysilicon line", a word —and—should

Art Unit: 2818

be inserted between "a metal layer" and "a polysilicon line" in order to be consistent with the description.

The specification has been checked to the extent necessary to determine the presence of possible minor errors. However, the applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### **Claim Objections**

5. Claim 1 is objected to because of the following reasons: in claim 1, line 2, the limitation "the word **lin**" should be changed to --the word line--. Appropriate correction is required.

### **Claim Rejections - 35 USC § 102**

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim(s) 1-3, and 5-8 is/are rejected under 35 U. S. C. § 102 (b) as being anticipated by U.S. Patent No. 5,497,345 to Cappelletti.

Regarding claim 1, Cappelletti discloses a non-volatile read only memory device, as shown in figure 3, comprising:

Art Unit: 2818

a word line 7 formed over a substrate 2, wherein the word line includes a metal layer and a polysilicon line (col. 4, lines 9-18);

a trapping layer 21 located between the word line 7 and the substrate 2; and

a polysilicon protection line 23 & 24 (extending from the word line 7 to the a grounded doped region 29) formed over the substrate 2, the protection line electrically connects the word line 7 and the grounded doped region 29 in the substrate 2, wherein a resistance of the polysilicon protection line is higher than that of the word line. See also column 4, line 53 to column 5, line 7.

Regarding claim 2, Cappelletti discloses the device wherein the resistance of the polysilicon protection line is higher than that of the polysilicon line of the word line. See column 4, line 53 to column 5, line 7.

Regarding claim 3, Cappelletti discloses the device wherein the polysilicon protection line is connected to the grounded doped region 29 through a contact. See figure 3.

Regarding claim 5, Cappelletti discloses the device wherein the metal layer includes tungsten silicide. See column 4, lines 9-18.

Regarding claim 6, Cappelletti discloses the device wherein the polysilicon protection line is located above an isolation region 20. See figure 3.

Regarding claim 7, Cappelletti discloses the device wherein the isolation region include a field oxide layer. See figure 3.

Regarding claim 8, Cappelletti discloses the device wherein at least portion of the polysilicon protection line is formed over the grounded doped region. See figure 3.

### **Claim Rejections - 35 U.S.C. § 103**

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim(s) 4 is/are rejected under 35 U.S.C. 103 (a) as being unpatentable over U.S. Patent No. 5,497,345 to Cappelletti, in view of the following remarks.

Regarding claim 4, Cappelletti discloses the device comprising all claimed limitations, except for the trapping layer including a silicon oxide/silicon nitride/silicon oxide (ONO) composite layer. However, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of Cappelletti so that it would have an ONO trapping layer, because it is well known in the art that a charge trapping layer could be made by an ONO layer in order to obtain

Art Unit: 2818

separately chargeable areas in the same trapping layer (for more information, see U.S. Patent No. 6,583,007 to Eitan, column 4, lines 31-43).

### Conclusion

10. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dao H. Nguyen whose telephone number is (571)272-1791. The examiner can normally be reached on Monday-Friday, 9:00 AM – 6:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571)272-1787. The fax numbers for all communication(s) is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Dao H. Nguyen  
Art Unit 2818  
March 18, 2004



David Nelms  
Supervisory Patent Examiner  
Technology Center 2800